



Republika e Kosovës
Republika Kosova-Republic of Kosovo
Qeveria -Vlada-Government
Ministria e Administratës Publike/Ministarstvo Javne Uprave/Ministry of Public Administration

Interoperability Framework of the Republic of Kosovo

1 Introduction

Interoperability framework of the Republic of Kosovo (hereinafter: the Framework) emerges as an obligation by the current situation of electronic governance and information technology, and derives from the obligations undertaken under the e-Government Strategy and Action Plan implementing this strategy. This framework is also necessary for European integration, namely European interoperability.

Services to citizens, businesses, institutions and organizations, orientations towards reducing administrative burdens in the internal social process and in the process of European integration, present the need for serious engagements about the achievements of efficiency and transparency of public administration.

In order to have a full success, cooperation between the participants in the process, automation of exchange of information and integration of processes between the segments of the state administration should be placed with the aim of building services for everybody. This can be achieved only if the achievements and opportunities provided by systems and information technology infrastructure are used.

Interoperability is necessary to achieve high performance of each institution and to increase the level of integrated and automated processes.

The Framework presents all the elements and the necessary actions to be taken by all institutions in the country, with the aim of establishing interoperability to achieve very significant development and increase the living standards.

2. General description of the Framework:

Based on the European Interoperability Framework, the term “interoperability means: **“the ability of diverse organizations to interact towards mutually agreed common goals, involving the sharing of records, information and knowledge, through the business processes they support and use ICT systems”**”.

The framework is an agreement made for interoperability for various organizations that agree to work together towards the delivery of public services to the third party, the basic elements of which would be: vocabulary, concepts, principles, policies, definitions, recommendations and practices.

The Framework is entirely based on the Strategy on Electronic Governance 2009-2015 and the Action Plan implementing this strategy, and the European Interoperability Framework.

Interoperability is a necessary prerequisite for efficient public administration.

The following objectives are covered:

- Cooperation between public administration institutions at the establishment of efficient public services;
- Exchanging information between public administration institutions to fulfill legal requirements or levels of political forums;
- Sharing and reusing information in public administration to increase administrative efficiency and reduce administrative burdens in relation with citizens and businesses;

This framework is oriented in:

- Providing public services to citizens and businesses in the nearest points for these categories, for obtaining public administration services;
- Reducing costs for public administration, citizens, businesses and organizations through efficient and effective delivery of services.

The objective of the Framework, in addition to established systems, is to establish new citizen-oriented state information systems in order to facilitate the delivery of services. Despite the quantity of services and number of public administration institutions that are part

of the process, information management systems will be integrated with the purpose to enrich services and simplify their delivery.

This framework shall serve as:

- Guide, on how to act with information management systems in institutions.
- Guide for project managers in the area of information technology in state institutions related to the concept of construction and elaboration of systems in relevant institutions.
- Support for organizing and preparing public procurement in the area of IT.
- Institution's orientation, from a dispersed public administration services to the concentration of administrative services in one place.
- Reduce expenses on information technology sector, through expanding the use of delivery systems and better solutions.
- Establish interactions through new projects in IT which will be based on open standards and will include the needs of all institutions involved in the process of finalizing the services.
- Establish cooperation and management of state information systems and determine the best development solutions in IT.
- Contribute to broad participation in the development of different management systems in state institutions.
- Opportunity for independent development of all systems in terms of organizational, semantic and technical interoperability.
- Establish effective vertical and horizontal relations in the area of IT in public administration.
- Ensure free competition in public procurement area.

European Union Program - Interoperability Solutions for European Public Administration (ISA) - is based on four types of initiatives (actions): **Strategies, Frameworks, Guidelines and Services & Tools.**

The Framework is based on the model of the European Interoperability Framework, based on the orientations of our country for European integration and on time establishment of interactions of our systems and services with the European ones.

The framework is based on the availability of multiple and sustainable use, transparency, open source and innovation, continuous improvement, joint interest and mutual confidence.

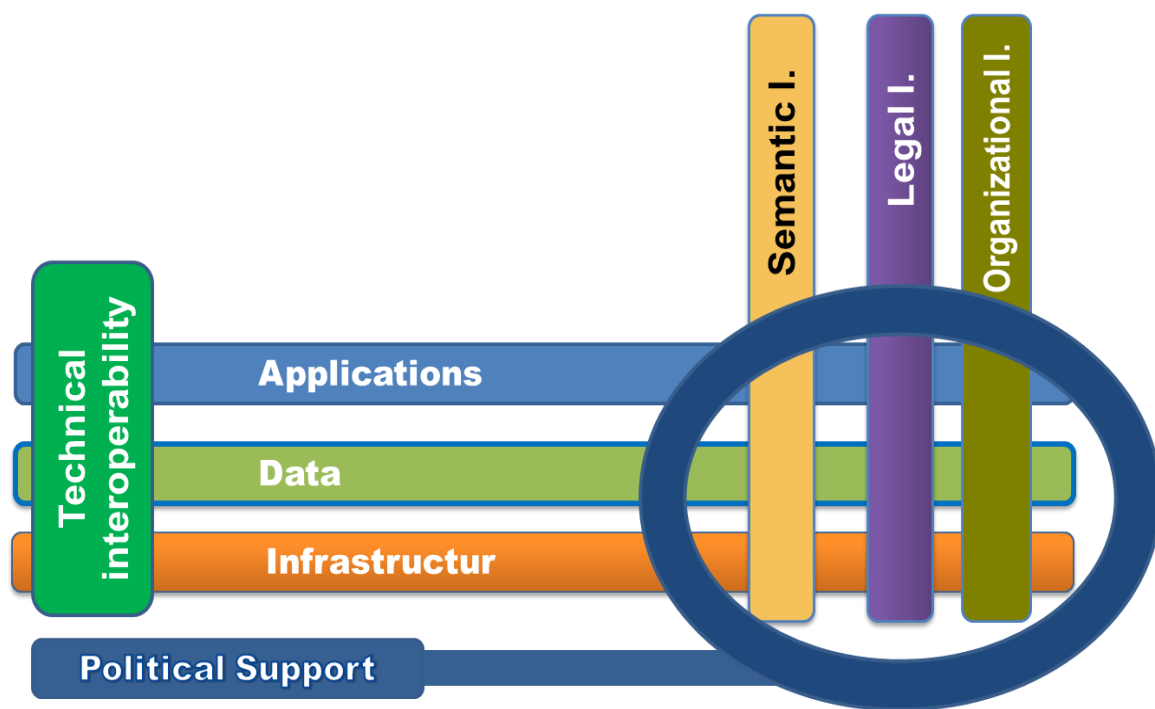


Fig.1. Interoperability and political support

Recommendation 1. Kosovo should consistently harmonize the framework with the EIF, by taking the best practices and by not allowing norms beyond these standards.

3. Underlying principles of the Framework

This chapter deals with the underlying principles of good administration that are relevant to public administration processes, related to the establishment of public services. In general, the principles outlined describe the content on which the decision-making and implementation of public services in Kosovo is based.

Principles of the Framework are based on 12 underlying principles of the EIF.

3.1 Principle 1. Subsidiarity and Proportionality

The principle of Subsidiarity (maximum localism, minimum centralism) implies that decisions of state institutions are as closely as possible to the citizen.

The principle of proportionality obliges the institutions to take actions that are acceptable objectives for those to whom certain policies are dedicated. This makes the government to be maximally engaged for the option that provides full independency in the actions of local institutions.

The principle of Proportionality and Subsidiarity are also based in delivery of public services, and therefore to the exchange of information necessary for the delivery of such services.

3.2 Principle 2: User Centricity

Public Services are provided to serve citizens and businesses. More precisely, their needs should determine which public services are provided and how they are delivered. So, citizens and businesses will expect:

- Easy access to services in a secure and flexible manner by respecting privacy.
- To provide any given piece of information only once (not to bother citizens by giving information they already gave)
- To use a single contact point even though it may happen that some administration institutions work together in order to provide a service.
- Multichannel delivery allowing access to services anyhow, anywhere and anytime.

Recommendation 2. The State Portal of the Republic of Kosovo www.rks-gov.net, as a contact point, is continuously advanced, updated and supplemented with new services for citizens and businesses.

3.3 Principle 3: Inclusion and Accessibility

The use of ICT should create equal opportunities for all citizens and businesses by delivering open, inclusive services that are publicly accessible and without discrimination. Inclusion aims to make available all opportunities offered by new technologies in order to overcome social and economic disadvantages.

Accessibility aims at providing access to public services for the disabled persons, thus they can experience the same service levels as all other citizens.

This principle has to be considered throughout the whole development process of public services regarding design, information content and delivery. Inclusion and Accessibility usually encompass multichannel delivery. Traditional service delivery way may co-exist with new ways established using technology, giving citizens a choice of access.

Recommendation 3. All public administration institutions should act in compliance with the Administrative Instruction No. 03/2011 on Public Institution Web Pages, while this AI should be continuously modified according to the latest international standards in this area.

Recommendation 4. All responsible institutions, notably ART should be in maximum engaged in securing ccTLD of Kosovo.

3.4 Principle 4: Security and Privacy

Citizens and businesses must be assured that they interact with public administration, in a reliable environment and in full compliance with applicable legislation related to privacy and data protection. Public institutions must guarantee the privacy of citizens and confidentiality of information provided by business.

Through additional security mechanisms, citizens and businesses should have the right to verify their information preserved by administration, and they should have the opportunity to decide whether this information may be used or not by third parties for other purposes.

Recommendation 5. Aspects of personal data protection as well as respecting the Law on Data Protection should be managed by the competent body.

Recommendation 6. Institutions of public administration must respect the Administrative instruction No. 01/2010 on Security and Access to Data Bases and Administrative Instruction No. 02/2010 on Information Security Management.

3.5 Principle 5: Multilingualism

Multilingualism needs to be carefully considered when designing public services, so the citizens and businesses are served in their own language by public administration, by respecting the Law No. 02/L-37 on the Language Use. The multilingual aspect to interoperability comes into play also in cases of exchange of information between ICT systems, which use different languages. Whenever possible, information should be transferred in a language independent format, agreed between all parties involved.

Recommendation 7. Public administration institutions should continue to apply multilingualism and constantly expand it at every level.

3.6 Principle 6: Administrative Simplification

Businesses treat large amount of information, due to legal obligations they have for development of their activities. If this process is not properly handled by the public administration, it can be a burden for business development activities, therefore public administration institutions through reforms should be determined to eradicate administrative barriers for business. To achieve this goal, public authorities in Kosovo must act together.

Recommendation 8. In order to eradicate administrative barriers, public administration institutions should coordinate with the relevant body for the administrative processes – MPA.

3.7 Principle 7: Transparency

Citizens and businesses should be able to understand administrative processes. They should have the right to track administrative procedures that involve them, and should be active participants in decision making that affects them.

Transparency is very important, as it allows citizens and businesses to express themselves freely regarding the quality of public services, in order to continuously improve current services and provide suggestions for new services.

3.8 Principle 8: Preservation of Information

Records and information in electronic form held by administrations for the purpose of documenting procedures and decisions must be preserved. The goal is to ensure that records and other forms of information keep their legitimacy, reliability and integrity over time and can be accessed taking into account Security and Privacy.

In order to guarantee long-term preservation of electronic records and other kinds of information, formats content should ensure long-term accessibility, including preservation of associated electronic signatures and other electronic certifications.

For information sources owned and managed by different levels of administration, the preservation of information is a matter of relevant levels.

Recommendation 9: MPA shall issue bylaws for preservation of data electronically and in the National Data Centre.

3.9 Principle 9: Openness

Openness is the willingness of persons, organizations or the members of a community to provide the possibility to share knowledge for solving relevant problems.

Institutions should be open to each other in order to share information and knowledge.

Interoperability can be also obtained without openness, via homogeneity of the ICT systems, which implies that all partners use or agree to use the same solution to implement services.

Recommendation 10: Public Administration Institutions should favor openness when establishing the systems for delivering services.

3.10 Principle 10: Reusability

Reuse means when public administration institutions confronted with a specific problem benefit from the work of others by looking at what is available, assessing its usefulness and decide to use solutions that have proven their value elsewhere.

This implies that public administration institutions must be willing to share with others their service components. Re-use and sharing leads to collaboration towards bilateral and multilateral benefit purposes.

Recommendation 11: Public administration institutions are encouraged to reuse and share solutions and collaborate on finding common solutions when implementing public services.

3.11 Principle 11: Technological Neutrality and Adaptability

When establishing services in the institutions of public administration the focus should be the functional needs and avoid imposing specific technologies or products of their partners.

Public administration institutions should render access to services independent of any specific technology or product.

Recommendation 12: Public administration institutions should not impose any specific technological solution on institutions, citizens, businesses when establishing services.

3.12 Principle 12: Effectiveness and Efficiency

Public administration institutions should ensure that their solutions serve businesses and citizens in the most effective and efficient way and provide the best solution for taxpayer.

Recommendation 13. Public administration institutions should continuously monitor the effectiveness and efficiency of public services and on this basis build periodic reports arising from concrete actions for increasing the quality of these services.

4. The Public Services Conceptual Model

This chapter proposes a Public Services conceptual model which describes an organizing principle of construction and operation of Public Services in the Republic of Kosovo.

The conceptual model is a result of necessity and requirement of system integration and harmonization of Public Services in the Republic of Kosovo in harmony with European Union standards, by using the common opportunities and elements and best practices that will be implemented in Kosovo. As a ground for future implementations of public services should

be the conceptual model which aids in advancing mutual communication and understanding across the Institutions of the Republic of Kosovo.

The conceptual model emphasizes a building approach of public service systems for citizens, businesses and administration, allowing for the interconnection and reusability of components when building new services.

Application of the conceptual model is intended to bring practical benefits in establishing public service systems by public administration. The splitting of functionality into basic services with well-defined interfaces, conceived for reuse, will simplify and streamline the implementation of services and the re-use of components avoiding duplication of work.

4.1 The key concepts of the conceptual model

The conceptual model promotes the reuse of information, concepts, patterns, solutions, and standards in Kosovo in compliance with the level of EU states by recognizing that State Public Services:

- are based on information from various sources and various levels of administration within the institutions of the country, and
- combine basic services constructed independently by different institutions in public administration.

Therefore, the conceptual model highlights the need for modular service components, interconnected through the necessary infrastructure, working together towards the delivery of public services, in compliance with established standards by public administration institution and EU.

The conceptual model has to do also with creating and using interaction systems in administrative processes and public services coordinated and synchronized as integrated services throughout the whole time.

Recommendation 14. Public administration institutions should develop component based service model, by establishing public services using as much as possible the existing service components.

Recommendation 15. Public Administrations that are not yet integrated into common infrastructure scheme must quickly do this and also associate their components under this scheme during the establishment of their public services.

The basic elements of conceptual model are showed in the diagram below:

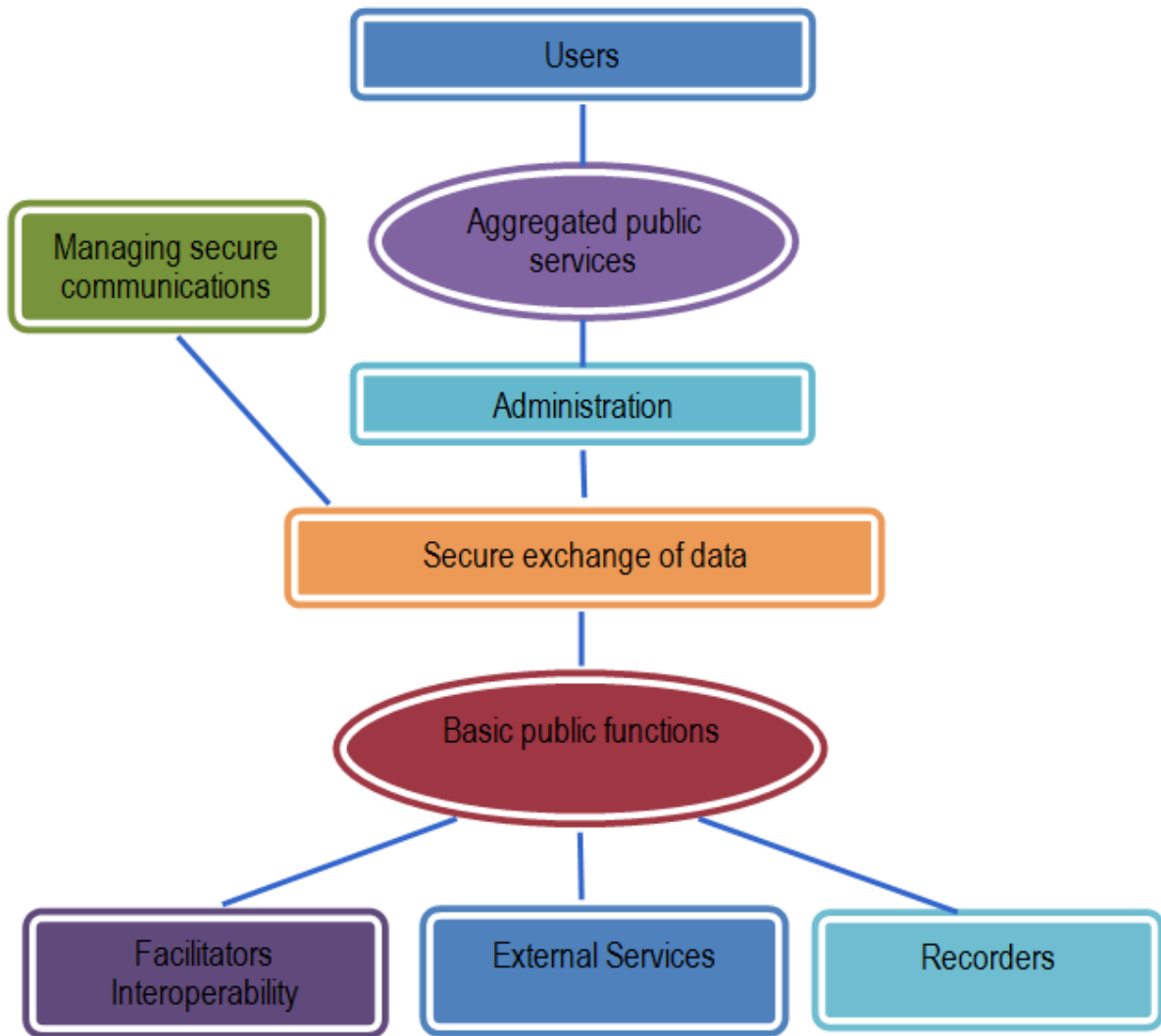


Fig.2. The conceptual model of Public Services

4.2 The basic public functions

The lowest layer of the Conceptual Model deals with the basic components from which public services in Kosovo can be built. The basic public functions are **interoperability facilitators, base registries, and external services**.

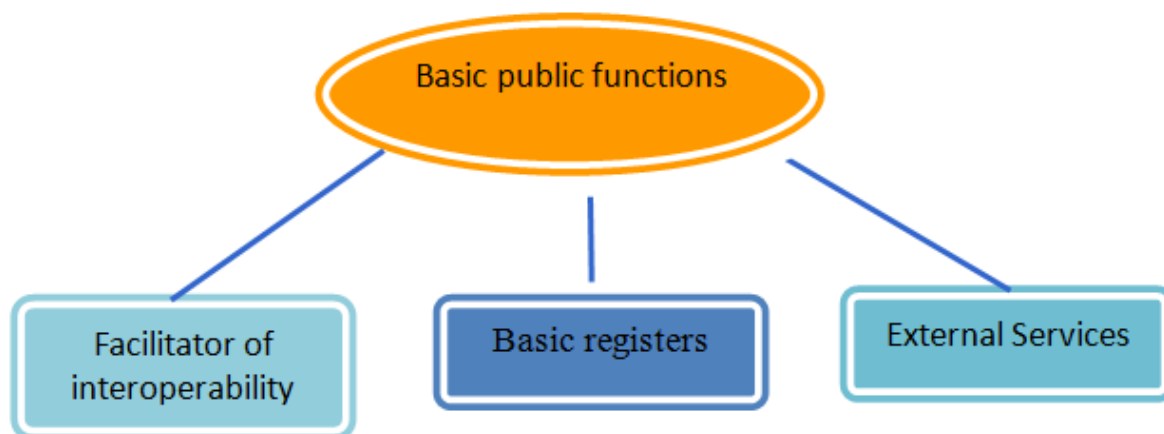


Fig.3. Basic Public Functions

Some of these basic functions have been developed by the public administration institutions and primarily serve for the direct use of institutions, businesses and citizens, and are made available for reuse, combination and provision of unified public services. Others are of infrastructural nature, external services and services provided by third parties.

4.3 Basic Registers

Basic registers are the most important components and reliable sources of basic information on matters such as: persons, companies, vehicles, licenses, buildings, locations, roads, etc. These registries are maintained by public administration institutions and are available for wider use by respecting security and privacy standards.

The common element running through all implementations of basic registries is the fact that they are authentic and authoritative in nature and separately or in combination is the cornerstone of public services. Their content is, in general, not static; they also reflect the information changes.

Recommendation 16. Public administration institutions should make their authentic sources of information available to others, coordinated by the body managing common systems and the security of public services.

One of the obstacles to the adoption of the conceptual model for implementation of electronic public services in Kosovo might be the existence of specific systems, without the possibility of connection with integrated systems. Such existing systems with accumulated records have specific characteristics limiting the possibilities for reuse and their fundamental re-engineering and development must take place in order to make the information available for European and Kosovo Public Services.

Access to authentic data sources for everybody will be facilitated if the interfaces to these sources are published and harmonized, at both the semantic and technical level.

Recommendation 17. Public Administration institutions, when working towards the establishment of electronic services, should develop the necessary interfaces for authentic sources and align them to the possibility of technical and practical interaction of systems.

4.4 Interoperability Facilitators

Interoperability facilitators' provide services such as translation between protocols, formats, languages or standards for establishing public services.

4.5 External Services

This includes services provided by external parties at business level, payment services provided by financial institutions, or at infrastructure level, connectivity services provided by telecommunication providers.

Recommendation 18. Public Administration institutions, respecting the highest safety standards, may reach agreement on external services in order to have efficient and acceptable public administration for citizens and businesses.

4.6 The Secure Data Exchange Level

This level is very important for the conceptual model since all access to public functions passes through it.



Fig.4. The secure data exchange level

4.6.1 Secure Data Exchange

From the process point of view, institutions and other entities exchange official information, which enable access to base registries. Information exchange between administrations, businesses and citizens should go through a secure, harmonized, managed and controlled process.

This process shall be realized by being:

- Signed and certified – both sender and receiver. They shall be identified through certain mechanisms.
- Encrypted – the confidentiality of the transported data is ensured,
- Logged – the electronic records are logged and archived to ensure eventual audit.

This level should allow secure exchange of messages, records, forms and other kind of information certified among the different systems. In addition to the pure transport of data, specific security requirements such as handling of electronic signatures, certification, encryption, time-stamping, etc. should be also managed at this level.

Security is one the main barriers for interoperability if not applied in harmonized and agreed way among organizations. The conceptual model intends to highlight this fact and draw the attention of all service providers to consider the security issues from the beginning, and to collaborate on a common framework to address their specific security needs via compatible mechanisms and common agreed specifications, as well as to reach common understanding on essential characteristics, such as: authorization levels and authentication strength.

One of the key prerequisites of secure data exchange means entry of national identification and authenticity infrastructure of systems in Kosovo and interaction with IT infrastructure in European Union countries.

Recommendation 19. Public administration institutions must create a unique registry of electronic identity for citizens, business and administration.

4.6.2 Secure Communication Management

The provision of secure (signed, certified, encrypted and logged) data exchange requires several functions, including:

- Service Management to ensure oversight of all communication activities relating to identification, authentication, and authorization, data transport, etc., including also the access granting, revocation and audit.
- Service Registry to ensure (if authorized), access to available services through localization and verification that the service is trustworthy.
- Service Logging, to ensure adequate logging of all data exchanges for future use, including archiving when necessary.

Recommendation 20. All public administration institutions should respect standards established by MPA relating to access to data bases and secure IT services.

Recommendation 21. MPA should establish management standards of National Data Center.

4.6.3 The Integrated (Aggregate) Service Levels

Integrated (aggregate) public services are constructed by grouping a number of basic public functions that are accessed in a secure and controlled way. These services can be provided by local, national, regional and EU level institutions.

The typical integrated (aggregate) service shall function as one single service.

Establishment of services or integration (aggregation) is achieved through proper mechanisms, depending on process specific requirements.

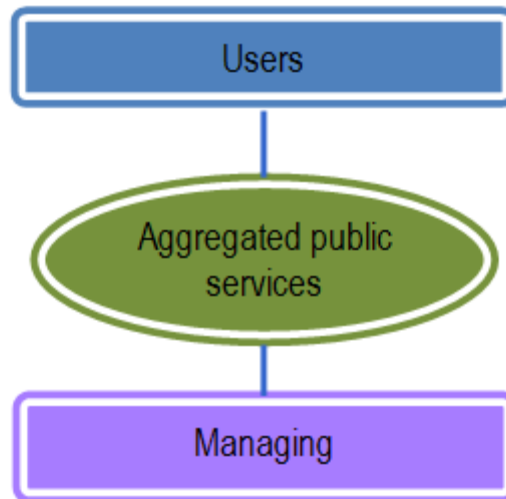


Fig. 5. Levels of integrated (aggregate) services

5. Interoperability Levels

This part of the framework describes the Interoperability levels which are based on the European Interoperability Framework (EIF). There are four basic levels of interoperability: **legal interoperability, organizational interoperability, semantic interoperability and technical interoperability.**

Political levels have fundamental influence in the establishment of electronic services in public administration. In establishing electronic services laws, set priorities, administrative capacities, etc. are determinant.

Recommendation 22. Public administration institutions should obtain continuous political support for their interoperability aspects.

5.1 Legal Interoperability

Legislation has an important role with regard to the provision of public services. Non-coordination among public administration institutions and legal gaps, or legal contradictions in certain cases, negatively affects the process of establishing quality public services. Regulatory initiatives and the completion of these legal barriers are important for finding acceptable solutions.

Recommendation 23. Public administration institutions should review and harmonize the legislation in order to reduce and optimize processes.

Recommendation 24. The Assembly/Government should clarify and unify the responsibilities of the central public administration bodies regarding the establishment of electronic services.

Recommendation 25. The law on electronic governance should be drafted and approved.

5.2 Organizational Interoperability

Organizational interoperability applies through integration of administrative processes in relation to exchange of information. This level of interoperability includes aspects of how public administration institutions cooperate among themselves in order to create public services, each under the responsibility it has, and citizens and businesses receive the finalized services.

Recommendation 26. Public administration institutions should use the European Open Method for Coordination – OMC, as organizational interoperability model.

Recommendation 27. Public administration institutions should strengthen more the level of cooperation achieved, during the establishment of public service and their massive use, in order to satisfy demands and needs of citizens and businesses, and the administration itself.

In order for public administration institutions to interact together for finalizing or completing public services, it is essential to harmonize administrative processes, reduce them as much as possible by eliminating unnecessary or repetitive processes to finalize new processes.

Recommendation 28. Public administration institutions need to document new interoperability processes, emerging from the harmonization and reduction of previous processes, with the aim of providing quality public services and elimination of administrative barriers.

Orientation towards qualitative electronic services is the base model on which modern public administration is built, which requires the rigorous structuring of the relationships between service providers and service consumers. This determines the necessity of assisting the ongoing joint activities and the interconnection of administrative processes based on bilateral and multilateral agreements.

Managing of changes has considerable influence over establishing and delivery of public services. Changes during the process of establishing and managing public services are critical in terms of progress and flow of provided and consumed services.

Recommendation 29. Public administration institutions should clearly define the process of management changes, in order to ensure continuity of establishment and delivery of each public service.

5.3 Semantic interoperability

Semantic interoperability is the ability of all participants to interpret the exchanged information in the same manner. This can be achieved by regulating the semantic field of action between interested parties.

Semantic property (field) includes all resources necessary to achieve semantic interoperability. It consists of systems of classification, nomenclature, various dictionaries, XML schemes and other rules, the specifics of their interactive reports and determining their interaction rules.

The structure and meaning of data in public administration is often defined in the relevant regulations and therefore created records. The Framework implementation process involves continuous creation of these resources in a semantic common property (field).

Deadlines and activities in which institutions will develop proposals of semantic interoperability documents based on relevant regulations shall be set in planned way and by harmonizing them through the process of implementation of interoperability. These processes also include their review.

Recommendation 30. Public administration institutions should support the establishment of sector-specific and cross-sectorial groups aimed at facilitating semantic interoperability and should encourage the use of results achieved by such groups.

5.4 Technical Interoperability

This interoperability covers the technical aspects, such as interface specifications, interconnection services, data integration services, data presentation and exchange, etc.

Technical Interoperability should be ensured via standards established by recognized standardization organizations or technical specifications made available by industrial consortia or other standardization forums.

To enable information interoperability, all public administration institutions must respect the laws and bylaws in relation with the use of shared public network and domain. In addition to physical network, institutions need to advance and harmonize their information systems in accordance with instructions issued by the responsible public administration institution for ICT standards.

Technical interoperability level include: communication networks, ICT standards in line with EU standards, development and implementation of new systems in accordance with these standards, and integration of services to businesses and citizens in the state portal. Customs systems must be compatible with the EU customs systems.

Recommendation 31. Public administration institutions should constantly use the standards established by MPA, which should be harmonized with the European standards, in order to ensure technical interoperability during development and establishment of public services.

6. Interoperability Agreements

An important aspect of interoperability is the cooperation between various institutions regarding the way of information exchange to provide efficient public services for citizens and business.

Such cooperation takes place at every interoperability level, so that the administrations in the working process should formalize their cooperation by interoperability agreements.

Agreements should be drafted in that manner so they achieve the intended purpose – the provision of services by maintaining maximum internal autonomy for each organization.

At the legal level, interoperability agreements are expressed in concrete and binding terms via applicable legislation and the strategy on e-governance.

At the organizational level, interoperability agreements can take the form of inter-sectorial agreement to specify the obligations of each party participating in relevant administrative processes meeting points. Interoperability agreements at the organizational level will define expected levels of services delivery, support/development procedures, contact details, etc. referring to agreements at the semantic and technical level.

At the semantic level, interoperability agreements may take the form of various schemes, code lists, data dictionaries, etc.

At the technical level, interoperability agreements will include communication protocols, messaging specifications, data formats, security specifications, etc.

6.1 Assessing and Selecting Formalized Specifications

Public administration institutions decide on what formalized specifications or technologies to use in order to ensure the interoperability. They should assess specific interoperability needs of relevant administration, such assessment and selection should be based on objective criteria, mainly related to functional interoperability needs.

Recommendation 32. Public administration institutions should use a structured, transparent and objective approach to the assessment and selection of formalized specifications.

Open specifications derive from service components based on formalized specifications, separable and usable. If the principle of openness is applied in full:

- All participants can contribute to the elaboration of the specification and public review organization;
- The specification document is available for everybody to study and to share with others;
- The specification can be implemented under the different software development approaches.

Because of interoperability, the use of open specifications, enables sharing and re-use in the context of quality public service delivery. Public administration institutions may use less open specifications, especially in cases where open specifications do not meet the functional interoperability.

Recommendation 33. Public administration institutions should prefer open specifications when establishing electronic services.

6.2 Contribution to the Standardization Process

If public administration institutions do not have suitable formalized specification for specific need in a specific area, and if new specifications have to be developed, they will be developed and adjusted with relevant standards.

Recommendation 34. Public administration institutions should actively participate in standardization process.

6.3 The contents of General Agreement

Contents of the General Agreement should include the required main points, including their features, which represent the harmonized entirety and that is acceptable and feasible for all parties involved.

Content, according to the key points and necessary annexes of General Agreements are set out in Annex A of the Framework..

Recommendation 35. Public administration institutions should respect the Annex A of this Framework during drafting the agreement.

7. Services Infrastructure

In general, services infrastructure presents electronic governance and ICT services, established for citizens, business and administration in the Republic of Kosovo. Systems of electronic services, systems of ICT physical infrastructure management and this physical infrastructure itself are composed of their components, which can operate with a certain function, but also in the interaction, presenting the entirety of services infrastructure.

The entire process of establishing certain services is built by many interconnected administrative and technical processes, supported by adequate infrastructure functionality, in order for services to reach the final user.

The principle of openness is very important during the construction and infrastructure services management process, aiming at the advancement of knowledge and its use to solve the potential problems of administrative processes, through common use of information among administrations.

From the experience of others, public administration institutions should use solutions that are shown valid and successful.

Public administration institutions should make maximum use of established infrastructure services, but also be active part of the advancement and contribute to the process of advancement and strengthening the common infrastructure.

7.1 Government Network

Governmental network established by MPA is a very important infrastructure component. In this network are engaged the most of public administration institutions in the Republic of Kosovo. The government network is also composed of many segments of certain infrastructure, but in general, enables the performance of many services for all institutions of public administration, citizens and businesses.

There are still state institutions which use other networks out of state network.

Joint investment of institutions in the government network and use of resources offered by this network is essential for the Kosovo institutions. Being the owner and manager of this network by the administration itself is an important and another advantage for services infrastructure.

Institutions administer, manage and advance their IT systems, but the involvement of these IT systems takes place at the endpoints of the state government.

Recommendation 36. In a short time, all public administration institutions should have access to endpoints of state network, while MPA in cooperation with other institutions should continuously expand and strengthen the state network.

Recommendation 37. Public administration institutions should invest more in capacity building of internal network and their management.

7.2 Data Center

MPA began with the establishment of National Data Center. This center would actually be a repository of electronic information and presents the national electronic memory of the Republic of Kosovo.

Capacities and sufficient space for the placement of data bases and electronic records are established for all institutions of the country. The National Data Center, in its infrastructure has the management resources in terms of creating space, capacity management and application of high security.

The Secondary Data Center should be also finalized in the future in order to preserve the national memory of the data from various natural disasters.

Recommendation 38. All public administration institutions should use the capacities of National Data Center, in order to establish data or their “back up.

7.3 Systems and Services

MPA has established a Systems Center, in terms of providing quality services to the public administration for communication through official email, Internet delivery, institutional domains and sub-domains, providing IT security, communications with VoIP and video conferencing, hosting of official web pages, management and administration of state network, etc. There are institutions which do not use some of the mentioned services.

All systems established by MPA respect the Law on Language Use in providing public services. Software source codes in most of established systems are the property of MPA or any other institution in Kosovo.

Public administration institution in the development and use of new technology should focus on functional and technical needs of systems and possibly avoid unfamiliar and not usable technology decisions.

Application of XML technology should continue to apply in the process of integration of systems, when developing public electronic services.

Recently, public administrations have achieved to establish numerous electronic public services G2G, G2C and G2B. These services have connected many institutions by interacting them with each other.

Recommendation 39. Public administration institutions in continuous cooperation should establish new public services, advance existing services and reduce processes by eliminating eventual duplication.

Recommendation 40. I Public Administration institutions should use electronic services established by MPA and other public institutions in Kosovo.

7.4 State e-Portal

The State www.rks-gov.net is developed and managed by MPA. There are located relevant information and services to citizens, business, public administration and interested visitors. The e-portal is constantly enriched with new electronic services. Unification of access to obtain services from public administrations should take place. Identification of users is based on the civil registry records.

Recommendation 41. Public administration institutions by respecting personal data protection should establish the ID cards infrastructure as electronic identity for access to electronic public services located in the e-Portal.

7.5 Registries

The need to exchange information through various systems of institutions of the Republic of Kosovo requires the establishment of comprehensive and interoperability registries.

Possession of registries list of records is a good basis for coordination, planning, establishment and management of public services.

Registries should be reliable sources of information for persons, companies, vehicles, licenses, buildings, locations, roads, etc.

Electronic registries and information held by the administration should be well preserved, in order to preserve accessibility, reliability and integrity at all times and be accessible while respecting security and privacy.

Recommendation 42. In cooperation with other public institutions, MPA should create the base registries list and in coordinated way facilitate their interoperability.

7.6 Public Keys Infrastructure (PKI)

The legal and institutional infrastructure on creation and use of public keys and digital signature should be created.

Recommendation 43. The infrastructure of public keys should be established and comply with EU directive 1999/93 EC. The use of this infrastructure for citizens should be free of charge.

Public key infrastructure enables the reception of long distance services and information in unique manner and creates a secure electronic environment. Establishing this infrastructure enables the application of electronic ID cards and thus creates an easy and safe access to services located in the state e-portal.

Recommendation 44. Institutions should enable an appropriate environment for application of open software, which enables the application of electronic ID cards.

7.7 Requirements for Infrastructure Security Services

Infrastructure of systems, infrastructure of established services, physical infrastructure, must respect the standards of information technology and electronic governance. These standards should be continuously advanced by respecting the technological advancements and their application within the infrastructure of services in general.

Recommendation 45. Institutions should be based in European requirements of interoperability services infrastructure during systems integration and development.

Recommendation 46. Public administration institutions should respect the standards established by information technology and electronic governance by MPA, while constantly should be reviewed and respect the last developments of technology.

8 Abbreviations

TRA	Telecommunication Regulatory Authority
EU	European Union
ccTLD	Country code Top-Level Domain
EIF	European Interoperability Framework
G2B	Government-to-Business
G2C	Government-to-Citizen
G2G	Government-to-Government
IAS	Identification, Authentication and electronic Signature in an e-governance context
ID	Electronic Identification Cards
IOP	Interoperability
ISA	Interoperability Solutions for European Public Administration
EIF	European Interoperability Framework
FRAMEWORK	Interoperability Framework of the Republic of Kosovo
MPA	Ministry of Public Administration
OMC	Open Method of Coordination
CGA	Contents of General Agreements
IT	Information Technology
ICT	Information and Communication Technology
AI	Administrative Instruction
VOIP	Voice Over Internet Protocol
XML	Extensible Markup Language
www.rks-gov.net – official address of government portal	

9 Literatures

European Interoperability Framework
Australian Government Information Interoperability Framework
Croatian Interoperability Framework
ISO IEC 27001 /2005 Information Security Management Standard
Strategy on Electronic Governance 2009-2015

Contents of General Agreement

- Involved Entities
- Preamble
- Definitions
- Objectives
- Interoperability
- Obligations
- Reliance
- “Accession”
- Prices
- Solution of problems
- Duration and Termination

Attached as annexes / side letters should also be:

- Processes
- Roles, entities, organization
- Architecture
- Specification of cards
- Interface IAS/IOP
- Terminal specifications
- Certificates Specifications
- Minimum records
- Testing and acceptance procedures